



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Luc MOENS et al.

Serial No. 10/517,064

Filed December 3, 2004

SEMI-GLOSS POWDER COATING
COMPOSITIONS

: Attorney Docket No. 2004_1911A

: Group Art Unit 1796

: Examiner Alicia M. Toscano

: Mail Stop: AMENDMENT

DECLARATION UNDER 37 CFR 1.132

Dr. Luc Moens declares:

That his education and professional background are as follows:

He obtained a Ph.D. in Chemistry from the Catholic University of Leuven, Belgium in 1985. Since 1986, he has been working in the field of Powder Coatings for UCB (now CYTEC Surface Specialties). Dr. Moens is the first inventor of the present application and of many more inventions in the field of Powder Coatings.

That he has conducted the following tests to demonstrate that:

Comparative tests were run to show the different behavior of high gloss and low gloss coating formulations. For the setup and discussion, see Annex 1 attached hereto.

The results of these tests show that:

Low gloss formulations in the absence of the curing agent lack flexibility (Example B).

Formulations of the invention can, but do not need to be based upon tailored polyesters e.g. the CHDA polyester of Moens (Example C vs. Example A).

The addition of a curing agent to a high gloss formulation according to Moens makes quasi no difference (Example D vs. Example E), whereas the impact is significant for low gloss formulations.

Results obtained with (specific) high gloss coatings are not transferable to low gloss coatings.

Advantages of the claimed formulations over the art are:

No specific and tailored polyester is needed to achieve this flexibility unlike in other art cited (e.g. Moens (U.S. 5,397,641)).

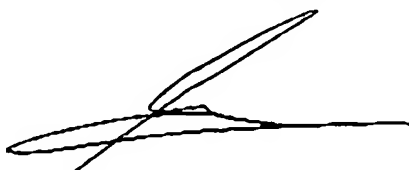
One can monitor gloss 60° values within the matt gloss range i.e. from 10 to 70% by changing the ratio of compound (2) on compound (3).

That from these tests he concludes:

A person skilled in the art would not combine the art cited. That the claims stand non-obvious over the art.

He further declares that all statements made herein of his own knowledge are true, and that all statements on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Nov 18 2008
Date



Signature

ANNEX 1

Setup

| | Polyester (1) | Acrylic copol. (2) | Curing agent (3) | Gloss 60° | DI/RI |
|-------|------------------|-----------------------|------------------------|-----------|-------------|
| Ex 13 | Ex1 | Ex 9 | XL552 | 10 | 200 / 200 |
| Ex A | Ex1 | Ex 9 | ---- | 12 | ---- / ---- |
| Ex B | Ex2(Moens) | Ex 9 | XL552 | 27 | 120 / 140 |
| Ex C | Ex2(Moens) | Ex 9 | ---- | 3 | --- / --- |
| Ex D | Ex2(Moens) | Ex15(Moens) | --- | 88 | 140 / 160 |
| Ex E | Ex2(Moens) | Ex15(Moens) | XL552 | 92 | 160 / 160 |

--- / --- no flexibility

Unless otherwise specified, the polyester and glycidyl group containing acrylic copolymer correspond to those in the Examples of US 2005/0171300. For each of the experiments the ratio of polyester over the glycidyl group containing acrylic copolymer (Acrylic copol.) was kept constant.

Polyesters used are either according to Example 1 (Ex1) of the invention or according to Example 2 (Ex2) of Moens (US 5,397,641). The glycidyl group containing acrylic copolymer is either according to Example 9 (Ex9) of the invention or according to Example 15 (Ex15) of Moens.

The acrylic copolymer of Ex9 has a number averaged molecular weight (Mn) of 15000, whereas the one according to Ex15 (Moens) has a Mn of around 5000. The first is referred to as a high Mn acrylic copolymer, whereas the second is referred to as a low Mn acrylic copolymer

The polyester according to Ex2 (Moens) is a tailored polyester comprising at least 10 mole % of 1,4-cyclohexanedicarboxylic acid (CHDA).

Results and discussion

In Moens (US 5,397,641) high gloss coatings are obtained from a low Mn acrylic copolymer and a particular linear CHDA-terminated polyester. One notices the high gloss values for coating formulations according to Ex D and Ex E.

Ex D illustrates the effect of the particular 1,4-CHDA-terminated polyesters on flexibility of high gloss coatings. Addition of a curing agent, different from the low Mn acrylic copolymer, does not result in substantial improvements (Ex E).

The situation is completely different for low gloss coating formulations.

There, the particular CHDA-terminated polyesters do not bring flexibility to powder coating compositions comprising the particular acrylic copolymer of the invention (the high Mn acrylic copolymer) – see Ex C.

Only by adding a curing agent one obtains a low gloss and flexible coating as illustrated in Ex B.

()

()

()

For low gloss coating formulations, the curing agent preferably used is Primid XL552, though other curing agents can be used as illustrated in Ex 18 & 19 of the invention (US 2005/0171300).